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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,924	04/15/2002	Yoshihiro Kawaguchi	10690//126885	8863

7590

06/16/2003

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EXAMINER

TELLER, ROY R

ART UNIT

PAPER NUMBER

1654

DATE MAILED: 06/16/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/937,924

Applicant(s)

KAWAGUCHI, YOSHIHIRO

Examiner

Roy Teller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 is/are allowed.
- 6) ☒ Claim(s) 1 and 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

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### DETAILED ACTION

This office action is in response to Paper No: 7, received 10/2/01, in which claim 8 was amended.

Claims 1-11 will be examined.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites "...adding an aqueous solution of the silver salt **little by little**..." this is vague and indefinite as the metes and bounds of a "little" amount are not set forth in the disclosure.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura, USPN 5,709,870, in view of Pedersen, USPN 6,468,521.

The claimed invention is drawn to a water-insoluble silver conjugated protein formed of a silver salt and a water-soluble protein containing 0.1 to 200  $\mu$  moles of active thiol groups per gram. The silver salt is silver nitrate or silver acetate. The water-soluble protein is a whey protein or a water-solubilized material of an eggshell membrane protein. The silver conjugated protein is an antibacterial/antifungal agent. The antibacterial/antifungal agent can be applied to paper as a coating.

Yoshiruma teaches a silver-containing antimicrobial agent which is excellent in affinity to fiber, antimicrobial property and anti-fungal property, see abstract. Yoshimura discloses paper as a material for use of the antimicrobial, see column 16, claim 6. Yoshimura teaches the antimicrobial agent is water resistant and will maintain its antimicrobial properties in a water-contacting environment, see column 2, lines 5-8 Yoshiruma discloses the antimicrobial agent containing silver in the amount of 0.01 to 1% by weight, see abstract. Yoshiruma does not teach the antimicrobial agent as comprising a water soluble protein.

Pedersen teaches a composition having antibacterial and/or antifungal activity comprising a silver compound, see abstract. Pedersen discloses silver complexes that are stable in dry conditions and aqueous solutions, see column 3, lines 28-30. Pedersen teaches the silver compound can be cross-linked with gelatine (a water soluble protein) to form a hydrophilic polymer, see column 8, claim 5. Pedersen discloses the use of silver nitrate or silver acetate for the present invention, see column 4, lines 40-41.

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It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have combined the antimicrobial agent of Yoshiruma with hydrophilic polymer of Pedersen, because Yoshiruma teaches that an antimicrobial agent which has water resistance and maintains antimicrobial properties in a water contacting environment is an objective of the invention, see column 2, lines 5-8.

### ***Conclusion***

Claims 2-4 are declared free of the art. Claims 1 and 5-11 are rejected.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy Teller whose telephone number is (703) 305-4243. The examiner can normally be reached on Monday-Friday from 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (703) 306-3220. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

RT  
1654  
6/9/03

RT

  
**BRENDA BRUMBACK**  
**SUPERVISORY PATENT EXAMINER**  
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